

WHAT IS CLAIMED IS:

1. An apparatus for manufacturing a solid polymer film with a catalyst deposited thereon made of a catalyst and a solid polymer film, comprising:
 - 5 a heater that preheats the solid polymer film;
 - a hot press machine that forms a joined member by heating and pressing at least one catalyst substrate carrying a catalyst on one side of a transfer substrate and the solid polymer film preheated with the heater while the catalyst and the solid polymer film are in contact; and
 - 10 a separating machine that separates the transfer substrate from the joined member.
2. A device according to claim 1, further comprising:
 - a cooling machine that cools the catalyst carrier substrate.
- 15 3. A device according to claim 1, wherein the separating machine separates the transfer substrate at an angle of substantially 180 degrees with respect to the integrated joined member.
 4. A device according to claim 1, further comprising: - 20 a cooling machine that cools the joined member.
5. A device according to claim 1, wherein the heater and the hot press machine are integrated.
- 25 6. A device according to claim 1, wherein the joined member is such that the catalyst is joined to both sides of the solid polymer film.
7. A method for manufacturing a solid polymer film with a catalyst deposited thereon made of a catalyst and a solid polymer film, comprising

preheating a solid polymer film;

contacting a catalyst carrier surface of at least one catalyst carrier substrate carrying
a catalyst on one side thereof with the preheated solid polymer film;

- forming a joined member by heating and pressing the catalyst carrier substrate and
5 the solid polymer film; and
separating the transfer substrate from the joined member.

8. A method according to claim 7, further comprising:

- cooling the catalyst substrate prior to contacting the catalyst carrier substrate with
10 the solid polymer film.

9. A method according to claim 7, wherein the angle between the transfer substrate
and the solid polymer film becomes substantially 180 degrees in the separating step.

- 15 10. A method according to claim 7, further comprising:

cooling the solid polymer film with a catalyst deposited thereon prior to separating
the transfer substrate.